

CLAIMS

1. A shoe comprising a vamp (1) secured to a sole (2), and an innersole (3) removably insertable into the shoe above said sole, the sole (2) presenting at least one deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 5 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) and at least one substantially non-deformable part (7A,B,C), said deformable part enabling the sole width and/or length and/or perimeter to be at least partially varied to hence adapt the sole to the dimensions of the user's plantar region, said shoe comprising means (14; 24; 34) to maintain the sole in a preferred deformed 10 position adapted to the dimensions of the shoe user's foot; characterised in that the means to maintain the sole in a preferred deformed position comprise at least one substantially rigid element (14; 24; 34), said rigid element being secured to the innersole (3) in a position such that when said innersole is inserted into the shoe said element becomes positioned in 15 correspondence with at least a portion of the deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) of the sole (2), said rigid element being shaped and dimensioned such as to maintain the sole in said preferred deformed position.
2. A shoe as claimed in claim 1, characterised by comprising for each 20 shoe size a plurality of different innersoles (3) comprising rigid elements (14; 24; 34) of different dimensions and/or shapes, in order to be able to choose from said plurality of innersoles, for a particular shoe user, that which best adapts to the dimensions of the user's plantar region, said innersoles (3) all being able to be inserted into a shoe of the same size but 25 to deform its sole (2) differently.
3. A shoe as claimed in claim 1, characterised in that the rigid element

(14; 24; 34) is plate-like (14A).

4. A shoe as claimed in claim 1, characterised in that the rigid element (14; 24; 34) presents a flat part (14A) from which flanges (14B) extend to lie along the sides (1A) of the vamp (1) in order to enable the vamp to be
5 deformed.

5. A shoe as claimed in claim 1, characterised in that the rigid element (14; 24; 34) and the innersole (3) form one piece.

6. A shoe as claimed in claim 1, characterised in that the sole (2) is a combination of two parts secured together, namely an intermediate part (4)
10 the lower face (4A) of which comes partly in contact with the ground, and an outer part (5) comprising a plurality of elements (5A, B) to come into contact with the ground.

7. A shoe as claimed in claim 6, characterised in that the intermediate part (4) of the sole (2) comprises deformable parts (6A, 6B) and
15 substantially non-deformable parts (7A, B, C); said deformable parts (6A, B) enabling the sole dimensions to be at least partially varied to adapt it to the dimensions of the shoe user's plantar region.

8. A shoe as claimed in claim 1, characterised in that the non-deformable parts (7A-C) of the intermediate sole (2) are made of leather
20 whereas the deformable parts (6A-B) are made of a deformable plastic chosen from natural rubber, synthetic rubber, vulcanised rubber and injection moulded thermoplastic.

9. A shoe as claimed in claim 1, characterised in that the deformable parts (6A-B) present two coplanar flanges (8) connected together by an
25 intermediate bellows part (9).

10. A shoe as claimed in claim 9, characterised in that the flanges (8A)

and the entire deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) are made in one piece with the sole lower part (5) which comes into contact with the ground.

11. A shoe as claimed in claim 10, characterised in that the sole part (5)
5 and the deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B;
76A,B; 86A,B; 96A,B) are made of the same material or different materials,
for example by normal moulding or injection moulding; the material of that
part (5) which comes into contact with the ground having a greater density
than the deformable part.
- 10 12. A shoe as claimed in claim 9, characterised in that the flanges (8A)
are also provided below the parts (5B) and are secured to the leather sole
(4) together with said parts (5B).
13. A shoe as claimed in claim 1, characterised in that the deformable
part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B;
15 96A,B) presents a bellows (9) and has in cross-section a shape which is
one of the following: a single part of upwardly or downwardly facing U or V
shape, two mutually inclined V's, a plurality of U's having greater
dimensions at the centre of the bellows and orientated alternately, a series
of long, narrow identical U's orientated alternately, or with rounded ends
20 and arms of the U's which converge when in the non-deformed position, a
series of wide U's alternating with a central narrow U, a series of alternating
inclined V's of different dimensions, longer centrally than laterally, or a part
which is T-shaped in the non-deformed position and U-shaped in the
deformed position.
- 25 14. A shoe as claimed in claim 9, characterised in that to better house
the particular transverse shapes of the deformable parts (6A,B; 16A,B;

26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B), the walls of the seats (10) provided in the sole (4) for housing said deformable parts can comprise inclined walls which converge upwards (10A) or downwards (10B) to act as an abutment for respective walls of the bellows under non-deformed conditions.

15. A shoe as claimed in claim 14, characterised in that the abutment surfaces (10A) are not connected to the respective surfaces of the bellows (9), so facilitating bellows deformation.

16. A shoe as claimed in claim 9, characterised in that the flanges (8) of the deformable parts are housed in recessed seats (10) provided in the non-deformable parts (7A-C) and of shape and dimensions identical to said flanges, so that the flanges (8) and the upper surface (4B) of the sole intermediate part 4 are substantially coplanar.

17. A shoe as claimed in claim 1, characterised in that the deformable parts (6A-B) and non-deformable parts (7A-C) are rigidly joined together by moulding, gluing or sewing the deformable parts onto the non-deformable parts.

18. A shoe as claimed in claim 1, characterised in that the deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) has a continuous elongate shape.

19. A shoe as claimed in claim 1, characterised in that the deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) is positioned symmetrical about a longitudinal axis (S) of the shoe.

20. A shoe as claimed in claim 1, characterised in that the deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) has a shape chosen from one of the following shapes: a U shape

- which extends within that part of the sole from the plantar arch to the forefoot in correspondence with the outer edge of the sole, and with the terminal parts (13) of the U located below the plantar arch; a slightly arcuate shape which extends transversely to the sole longitudinal axis (S) at the
- 5 plantar arch; a closed shape substantially equal to the sole perimeter and positioned at the outer edge of the sole; a double wave, these disposed symmetrical about the sole longitudinal axis (S) in the forefoot and with the ends (26C) terminating at the toe and at the plantar arch of the sole; undulated transverse to said axis (S) and provided at the plantar arch; a
- 10 cross shape with the major arm extending substantially superposed on the sole longitudinal axis (S) from the toe to the heel region, and a part transverse to this axis provided at the plantar arch; a squashed double M with the M's disposed symmetrically about the sole longitudinal axis (S) in the forefoot part and with ends (46C) terminating at the toe and plantar arch
- 15 of the sole; an elongated V shape with the apex of the V located at the heel, and its ends terminating at the plantar arch; an elongate shape with a part superposed on the longitudinal axis (S) and extending from the heel region to the plantar arch region of the sole where it divides into two arched arms symmetrical about the longitudinal axis (S) and extending to follow the sole
- 20 profile and come together again at the sole toe; a lattice shape with parts parallel and perpendicular to the sole longitudinal axis (S); an arcuate shape with two arches disposed symmetrical about the sole longitudinal axis (S) in the forefoot part of the sole, with terminal parts (13) located at the plantar arch and toe of the sole.
- 25 21. A shoe as claimed in claim 1, characterised in that the rigid insert (24) is of cross shape.

22. A shoe as claimed in claim 1, characterised in that the rigid insert (24B) is of elongate shape and extends from one end of the sole (2) to the other, from the heel to the toe.
23. A shoe as claimed in claim 1, characterised by comprising means
5 (18) to removably secure the rigid insert (14; 24; 34) to the sole (4) in order to prevent the innersole (3) being able to remain raised from the sole (2) due to the rigid insert (14).
24. A shoe as claimed in claim 23, characterised in that the securing means comprise, projecting from the lower face of the rigid element (14),
10 teeth (19) to penetrate through holes (20) provided in the sole (4) and engage in seats provided in external elements (5B) of the sole (2).
25. A shoe as claimed in claim 1, characterised in that the sole (2) is made in one piece entirely from plastic material.
26. A method for adapting the dimensions of the sole of a shoe of claim 1
15 to the dimensions of the plantar region of a particular shoe user, comprising the step of at least partially deforming deformable parts (6A,B; 16A,B;
26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) of a sole (2) of the shoe, to adapt the width and/or length and/or perimeter of the sole to the particular dimensions of the shoe user's plantar region, and the step of
20 maintaining said sole deformation by dedicated means (14; 24; 34); characterised in that for each shoe size, that innersole (3) which best fits the foot dimensions of a particular user is selected from a plurality of different innersoles (3) insertable into said shoe, then said deformable parts (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) of
25 the sole (2) are deformed by inserting the particular selected innersole into the shoe, said innersoles (3) presenting at least one substantially rigid

element (14; 24; 34) provided in a position such that when said innersole is inserted into the shoe said element becomes positioned in correspondence with at least one portion of the deformable part (6A,B; 16A,B; 26A,B; 36A,B; 46A,B; 56A,B; 66A,B; 76A,B; 86A,B; 96A,B) of the sole (2), said rigid element being shaped and dimensioned such as to maintain the sole in that deformed position which adapts to the dimensions of the shoe user's plantar region.